

WHAT IS CLAIMED IS:

1. A method for charging for uncounted network traffic overhead, the traffic carried by data packets in a plurality of data paths, the method comprising the steps of:
 - a. providing a rate regulator having a regulator bandwidth and coupled to a respective ingress port, said rate regulator operative to regulate the rate of a data path established over a network between said respective ingress port and an egress port having an egress port bandwidth;
 - b. determining a respective overhead criterion for said data path; and,
 - c. configuring said rate regulator with said respective overhead criterion to charge for uncounted overhead, whereby each data packet transmitted through said rate regulator is handled as a packet that has additional bytes as determined by said overhead criterion, thereby ensuring that said regulator bandwidth does not exceed said egress port bandwidth.
2. The method of claim 1, wherein said step of providing a rate regulator coupled to a respective ingress port includes providing a rate regulator coupled to an ingress port having a rate selected from the group consisting of 10Mbps, 100Mbps and 1Gbps.
3. The method of claim 2, wherein said ingress port is an Ethernet port.
4. The method of claim 1, wherein said step of determining a respective overhead criterion for said data path includes determining an overhead criterion that defines the maximum difference size between an output overhead and an input overhead of each said data packet.
5. The method of claim 4, wherein said determining an overhead criterion includes calculating said overhead criterion using the formula $\{IN_s - OUT_s\} \cdot \Phi$, wherein IN_s is the size of an input packet input at said respective ingress port, OUT_s is the size of an output packet output at said respective egress port, and Φ is a rate factor.

6. The method of claim 5, wherein said rate factor Φ is equal to 1 if a rate of a ingress port at a source node is higher than a rate of said egress port, and wherein said rate factor Φ is equal to 0 if a rate of said ingress port is lower than said rate of said egress port.
7. The method of claim 1, wherein step of providing a rate regulator operative to regulate the rate of a data path established over a network includes providing an Ethernet based network having Ethernet traffic.
8. The method of claim 7, wherein said Ethernet based network is selected from the group consisting of a metro Ethernet network (MEN), a local area network (LAN), and a virtual local area network (VLAN).
9. The method of claim 7, wherein said Ethernet traffic is transmitted over a non-Ethernet network.
10. The method of claim 9, wherein said non-Ethernet network is selected from the group consisting of a SDH network and a SONET network.
11. The method of claim 1, wherein said egress port is an Ethernet port selected from the group consisting of 10Mbps, 100Mbps and 1Gbps.
12. A network rate regulator having a regulator bandwidth and used for regulating data packet traffic carried on a data path established between an ingress port and an egress port, said egress port having an egress port bandwidth, the regulator comprising:
 - a. a criterion determining mechanism for determining an overhead criterion for said data path; and
 - b. a configuring mechanism for configuring the rate regulator with said overhead criterion to charge for uncounted overhead, whereby each data packet is handled as a packet that has additional bytes as determined by said overhead criterion,

thereby ensuring that said regulator bandwidth does not exceed said egress port bandwidth.

13. The rate regulator of claim 12, wherein each said data packet has an input overhead and an output overhead, and wherein said overhead criterion is defined as a maximum difference between said output overhead and said input overhead.

14. The rate regulator of claim 13, wherein said overhead is calculated using the formula $\{IN_s - OUT_s\} \cdot \Phi$, wherein IN_s is the size of an input packet input at said respective ingress port, OUT_s is the size of an output packet output at said respective egress port and Φ is a rate factor.

15. The rate regulator of claim 14, wherein said rate factor Φ is equal to 1 if a rate of a ingress port at a source node is higher than a rate of said egress port, and wherein said rate factor Φ is equal to 0 if a rate of said ingress port is lower than said rate of said egress port,

16. The rate regulator of claim 12, wherein said network is an Ethernet based network having Ethernet traffic.

17. The rate regulator of claim 16, wherein said Ethernet based network is selected from the group consisting of a metro Ethernet network (MEN), a local area network (LAN), or a virtual local area network (VLAN).

18. The rate regulator of claim 16, wherein said Ethernet traffic is transmitted over non-Ethernet networks.

19. The rate regulator of claim 18, wherein said non-Ethernet network is selected from the group consisting of a SDH network and a SONET network.

20. The rate regulator of claim 12, wherein said egress port is an Ethernet port selected from the group consisting of 10Mbps, 100Mbps and 1Gbps.
21. The rate regulator of claim 12, wherein said ingress port is an Ethernet port selected from the group consisting of 10Mbps, 100Mbps and 1Gbps.